

## AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 4, line 7, as follows:

FIG. 2 indicated the effect of inducing the proliferation of lymphocytes. Peripheral blood mononuclear lymphocytes were isolated from fresh peripheral blood of HLA-A2+ healthy person by the Ficoll-Hypaque method, and were cultured in vitro in RPMI1640 culture media (containing 10% fetal calf serum) on a 96-well cell culture plate ( $10^6$  cells per well). IL-2 (5IU) and the test drug were separately added into the test drug group ( $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAAFPSDFFPVGGGDPRVRGLYFPA}$ ) (SEQ ID NO:1), the Pre-S2 control group and the blank control group; these cells were further cultured for six days and were stimulated with IL-2 and the test drug at the same doses for 48 hours; then  $^3\text{H}$ -TdR ( $1 \mu\text{Ci/ml}$ ) was added, and the cells were further cultured for 18 hours before they were harvested and the  $\gamma$ -count values were measured. The results indicated that the test drug could significantly induce the proliferation of lymphocytes, the minimal effective dose was 0.1 ng, and a dose-effect dependence was observed in the range of 0.1-10 ng.

Please amend the paragraph beginning on page 4, line 20, as follows:

FIG. 3 indicated the effect of inducing Th1 activation. Peripheral blood mononuclear lymphocytes were isolated from fresh peripheral blood of HLA-A2+ healthy person by the Ficoll-Hypaque method, and were cultured in vitro in RPMI1640 culture media (containing 10% fetal calf serum and 100 U/ml penicillin-streptomycin) on a 24-well cell culture plate ( $10^6$  cells per well) in groups. IL-2 (301U) and the test drugs ( $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)\text{CH}=\text{CH}(\text{CH}_2)_7\text{COKSSPAREGGGWLSLLVPFVSSSDPRVRGLYFPA}$ ) (SEQ ID NO:2) (at different doses) were separately added, and the cells were further cultured for six days. Then the cells were stimulated with IL-2 and the test drug at

the same doses once a week for three times. ~~24-Hours~~ Twenty-four hours after the last stimulation, the levels of IL-4 and IFN- $\gamma$  in the culture supernatant were measured by the ELISA method. The results indicated that the test drug could induce the secretion of IFN- $\gamma$  in a ~~notable~~ notable dose-effect dependence relation, while the effect of inducing the secretion of IL-4 is not obvious, suggesting that the test drug strongly induced the activation of Th1 type T cells, yet induced the activation of Th2 type T cells weakly.

Please amend the paragraph beginning on page 5, line 11, as follows:

FIG. 4 indicated the effect of inducing cytotoxicity. Peripheral blood mononuclear lymphocytes were separated from fresh peripheral blood of a HLA-A2+ healthy person by the Ficoll-Hypaque method, and were cultured in RPMI1640 culture media (containing 10% fetal calf serum) on a 24-well cell culture plate ( $10^6$  cells per cell) in groups. IL-2 (301U) and the test drugs (10 ng CO,  $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_7\text{KSSQYIKANSKFIGITEGGGDPRVRGLYFPA}$ ) (SEQ ID NO:3) were separately added, and the cells were further cultured for ~~[[6]]~~ six days. Then the cells were stimulated with IL-2 and the test drug at the same doses once a week for three times. ~~3-Days~~ Three days after the last stimulation, antigen-specific effector CTL cells were obtained, and their cytotoxic activities were measured by the standard  $^{51}\text{Cr}$  release test and compared. Target cells respectively were: 2215 (a human liver carcinomas cell line infected by HBV, which can simulate the function of liver cells infected by HBV), E6 (P815 cells transfected by human HLA-A\*0201, which were pre-incubated with CTL epitope peptide antigen), T2 (HLA-A2+ human T and B lymphocytoma cell line, which were pre-incubated with CTL epitope peptide antigen), and the effector cells to target cell ratios (E/T) were: 12.5, 25, 50 and 100, respectively. The results indicated that the test drug could induce the CTL effect in human PBMC, and specifically lysed and destroyed target cells (A). ~~24-Hours~~ Twenty-four

hours after the last stimulation to HLA-A2+ human PBMC, the effects of the test drug to induce the proliferating INF- $\gamma$  secreting CTL cells in peripheral blood lymphocytes were measured in the ELISPOT method and compared. The results showed that the test drug could induce the proliferation of INF- $\gamma$  secreting cells in human PBMC in a notable dose-effect dependence relation (B, C).

Please amend the paragraph beginning on page 5, line 29, as follows:

FIG. 5 indicated the antiviral effects of the immunogen of the present invention. Peripheral blood mononuclear lymphocytes were separately isolated from fresh peripheral bloods of a HLA-A2+HBV carrier, a patient suffering from acute hepatitis, and a patient suffering from chronic hepatitis, and were subjected to virus inhibition tests to measure the copy numbers of HBV-DNA (A) and secretion levels of HBeAg and HBsAg in the ~~supernant~~ supernatant (B, C). The results showed that with the increase of co-culture time, the expression/replication of HBV-DNA, HBsAg and HBeAg were inhibited in an obvious dose-effect dependence relation, indicating that the induction of HLA-A2+ human PBMC by the test drug (CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKANSKFIGITEAAAFPSDFFPVGGGCTKPTDGNCT) (SEQ ID NO:4) occurred in an obvious dose-effect dependence manner.

Please amend the paragraph beginning on page 6, line 11, as follows:

FIG. 6: HBV-DNA transgenic mice (ayw type Kunming mice transfected with the complete gene of HBV (1.3 Kb) were grouped randomly, and each group had ~~[[5]]~~ five mice. The mice were administered subcutaneously with one of ~~[[3]]~~ three doses (namely, 10, 100 and 1000 U/mouse) below both costal regions and at both postpede palmas, and the immunizations were enhanced once a week for ~~[[3]]~~ three times. INF- $\alpha$ 2b (15000 U/mouse) was included as a positive control

drug, and physiological saline was included as negative control drug. ~~30 Days~~ Thirty days after the end of the administration, spleens were removed from mice, and spleen lymphocytes were isolated and stimulated with 10 ng/ml test drug in vitro for ~~[[3]]~~ three days. The levels of cytokines such as IFN- $\gamma$ , IL-4, etc. in supernatant were measured by the ELISA method, and the activity of the test drug (CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKANSKFIGITEAAASIVSPFIPLLGGGDPRVRGLYFPA) (SEQ ID NO:5) for inducing the ~~differentiation~~ differentiation of T cells into Th1/Th2 type was analyzed. The results showed a strong secretion of IFN- $\gamma$ , and the IL-4 secretion did not exhibit an obvious dose-effect dependence relation (A, B, C). The expression frequency of IFN- $\gamma$  secreting cells in peripheral blood lymphocytes was measured by the ELI-SPOT method in said supernatant. The results showed that on the 30th day after the end of immunization, the expression frequency of IFN- $\gamma$  secreting cells in peripheral blood lymphocytes increased with the increase of immunogen dose, wherein the immunization doses of 100 and 1000 U/mouse resulted in an obvious increase of expression frequency of IFN- $\gamma$  secreting cells in peripheral blood lymphocytes in vivo, with the highest 3660 IFN- $\gamma$  secreting cells/10<sup>6</sup> PBMC being detected. In the group of administration with IFN- $\alpha$ 2b, the highest 1250 IFN- $\gamma$  secreting cells/10<sup>6</sup> PBMC (D) were detected. On the 10th, 20th and 30th day after the end of the three immunizations, bloods were removed, serum isolated, and the contents of HBsAg and HBV-DNA in the serum were separately measured by the ELISA method and quantitative PCR method. The results showed that said test drug could result in an obvious decrease of the levels of surface antigen secretion (C) level and HBV-DNA replication (F) level in a dose-dependent manner.

Please amend the paragraph beginning on page 9, line 7, as follows:

Said amino acid sequence 1 is QYIKANSKFIGITE (SEQ ID NO:6) or variant sequences thereof, PADRE (SEQ ID NO:7) or variant sequences thereof; said amino acid sequence 2 is PLGFFPDH (SEQ ID NO:8) or variant sequences thereof, MQWNSTALHQALQDP (SEQ ID NO:9) or variant sequences thereof, SILSKTGDPV (SEQ ID NO:10) or variant sequences thereof, VLQAGFFLL (SEQ ID NO:11) or variant sequences thereof, FLLTRILTI (SEQ ID NO:12) or variant sequences thereof, FLGGTPVCL (SEQ ID NO:13) or variant sequences thereof, LLCLIFLLV (SEQ ID NO:14) or variant sequences thereof, LLDYQGMLPV (SEQ ID NO:15) or variant sequences thereof, WLSLLVPFV (SEQ ID NO:16) or variant sequences thereof, GLSPTVWLSV (SEQ ID NO:17) or variant sequences thereof, KVLHKRTLGL (SEQ ID NO:18) or variant sequences thereof, VLHKRTLGL (SEQ ID NO:19) or variant sequences thereof, GLSAMSTTDL (SEQ ID NO:20) or variant sequences thereof, CLFKDWEEL (SEQ ID NO:21) or variant sequences thereof, VLGGCRHKLIV (SEQ ID NO:22) or variant sequences thereof, FLPSDFFPSV (SEQ ID NO:23) or variant sequences thereof, STLPETTVVRR (SEQ ID NO:24) or variant sequences thereof, EYLVSFQVW (SEQ ID NO:25) or variant sequences thereof, GLYSSTVPV (SEQ ID NO:26) or variant sequences thereof, GLSRYVARL (SEQ ID NO:27) or variant sequences thereof, FLLSLGIHL (SEQ ID NO:28) or variant sequences thereof, ILRGTSFVYV (SEQ ID NO:29) or variant sequences thereof, SLYADSPSV (SEQ ID NO:30) or variant sequences thereof, KYTSFPWLL (SEQ ID NO:31) or variant sequences thereof, SLYADSPSV (SEQ ID NO:32) or variant sequences thereof, ALMPYACI (SEQ ID NO:33) or variant sequences thereof, YMDDVVLGA (SEQ ID NO:34) or variant sequences thereof, WILRGTSFV (SEQ ID NO:35) or variant sequences thereof, KLHLYSHPI (SEQ ID NO:36) or variant sequences thereof, FTQAGYPAL (SEQ ID NO:37) or variant sequences thereof, SLNFLGGTTV (SEQ ID NO:38) or variant sequences thereof,

LAW OFFICES OF  
CHRISTENSEN O'CONNOR JOHNSON KINDNESS<sup>PLLC</sup>  
1420 Fifth Avenue  
Suite 2800  
Seattle, Washington 98101  
206.682.8100

LLDYQGMLPV (SEQ ID NO:39) or variant sequences thereof, LLVPFVQWFV (SEQ ID NO:40) or variant sequences thereof, GLSPTVWLSV (SEQ ID NO:41) or variant sequences thereof, LLPIFFCLWV (SEQ ID NO:42) or variant sequences thereof, YVNTNMG (SEQ ID NO:43) or variant sequences thereof, YVNTNMGLK (SEQ ID NO:44) or variant sequences thereof, SILSKTGDPV (SEQ ID NO:45) or variant sequences thereof, GLSPTVWLSV (SEQ ID NO:46) or variant sequences thereof, or SIVSPFIPLL (SEQ ID NO:47) or variant sequences thereof; said amino acid sequence 3 is DPRVRGLYFPA (SEQ ID NO:48) or variant sequences thereof, or CTKPTDGNCT (SEQ ID NO:49) or variant sequences thereof.

Please amend the paragraph beginning on page 11, line 25, as follows:

The said immunogen, characterized in that its primary structure is CH<sub>3</sub>(CH<sub>2</sub>)<sub>10</sub>COKSSPADREGGGS LNFLGGTTVSSSDPRVRGLYFPA (SEQ ID NO:50).

Please amend the paragraph beginning on page 11, line 28, as follows:

The said immunogen, characterized in that its primary structure is CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKANSKFIGITEAAALLCLIFLLVGGGDPRVRGLYFPA (SEQ ID NO:51).

Please amend the paragraph beginning on page 12, line 1, as follows:

The said immunogen, characterized in that its primary structure is CH<sub>3</sub>(CH<sub>2</sub>)<sub>16</sub>COKSSPADREAAALLDYQGMLPVGGGDPRVRGLYFPA (SEQ ID NO:52).

Please amend the paragraph beginning on page 12, line 4, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)\text{---CO}, \text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_7\text{KSSQYIKANSKFIGITEGGG}$  (SEQ ID NO:53).

Please amend the paragraph beginning on page 12, line 8, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)\text{CH}=\text{CH}(\text{CH}_2)_7\text{COFLPSDFFPSVAAADPRVRGLYFPA}$  (SEQ ID NO:54).

Please amend the paragraph beginning on page 12, line 11, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)\text{CH}=\text{CH}(\text{CH}_2)_7\text{COKSSPADREGGGWLSLLVPFVSSSDPRVRGLYFPA}$  (SEQ ID NO:55).

Please amend the paragraph beginning on page 12, line 15, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAA AFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:1).

Please amend the paragraph beginning on page 12, line 18, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPADREAA AFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:56).

Please amend the paragraph beginning on page 12, line 21, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPADREGGGLVFPVQWVSSSDPRVRGLYFPA}$  (SEQ ID NO:57).

Please amend the paragraph beginning on page 12, line 23, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPADREAAAGLSPTVWLSVGGGDPRVRGLYFPA}$  (SEQ ID NO:58).

Please amend the paragraph beginning on page 12, line 26, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAALLPIFFCLWVGGDPRVRGLYFPA}$  (SEQ ID NO:59).

Please amend the paragraph beginning on page 13, line 1, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSQYIKANSKFIGITEAAAYVNTNMGGGGDPRVRGLYFPA}$  (SEQ ID NO:60).

Please amend the paragraph beginning on page 13, line 4, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSQYIKANSKFIGITEAAFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:1).



Please amend the paragraph beginning on page 13, line 7, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEGGGFLPSDFFPSVSSSDPRVRGLYFPA}$  (SEQ ID NO:61).

Please amend the paragraph beginning on page 13, line 10, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAAYVNTNMGLKGGGDPRVRGLYFPA}$  (SEQ ID NO:62).

Please amend the paragraph beginning on page 13, line 13, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAAPLGFFPDHGGGDPRVRGLYFPA}$  (SEQ ID NO:63).

Please amend the paragraph beginning on page 13, line 16, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAAMQWNSTALHQALQDPGGGDPRVRGLYFPA}$  (SEQ ID NO:64)

Please amend the paragraph beginning on page 13, line 20, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPDAREAAASILSKTGDPVGGGDPRVRGLYFPA}$  (SEQ ID NO:65).

Please amend the paragraph beginning on page 13, line 23, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAVLQAGFFLLGGGDPRVRGLYFPA}$  (SEQ ID NO:66).

Please amend the paragraph beginning on page 13, line 26, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADRESSSFLLTRILTIGGGDPRVRGLYFPA}$  (SEQ ID NO:67).

Please amend the paragraph beginning on page 14, line 1, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAFLGGTPVCLGGGDPRVRGLYFPA}$  (SEQ ID NO:68).

Please amend the paragraph beginning on page 14, line 4, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAAGLSPTVWLSVGGGDPRVRGLYFPA}$  (SEQ ID NO:69).

Please amend the paragraph beginning on page 14, line 7, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAASIVSPFIPLLGGGDPRVRGLYFPA}$  (SEQ ID NO:5).

Please amend the paragraph beginning on page 14, line 10, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAASTLPETTVVRRGGGDPRVR GLYFPA}$  (SEQ ID NO:70).

Please amend the paragraph beginning on page 14, line 13, as follows:

The said immunogen, characterized in that its primary structure is  $\text{CH}_3[[-]](\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAA AFLPSDFPSVGGGCTKPTDGNCT}$  (SEQ ID NO:4).

Please amend the paragraph beginning on page 15, line 17, as follows:

The said method, characterized in that POROS 50R1, POROS 50R2, SOURCE 30 RPC or ~~[[Dleta]]~~ Delta Pak C18 is used in the reversed phase chromatography in the step (4).

Please amend heading 2, beginning on page 23, line 18, as follows:

2. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{10}\text{COKSSPADRE GGGSLNFLGGTTVSSSDPRVRGLYFPA}$  (SEQ ID NO:50)

Please amend heading 3, beginning on page 24, line 11, as follows:

3. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKA NSKFIGITEAAALLCLIFLLVGGGDPRVRGLYFPA}$  (SEQ ID NO:51)

Please amend heading 4, beginning on page 25, line 3, as follows:

4. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAA LLDYQGMLPVGGGDPRVRGLYFPA}$  (SEQ ID NO:52)

Please amend heading 5, beginning on page 25, line 24, as follows:

5. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)\text{---CO}$ ,  
 $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_7\text{KSSQYIKANSKFIGITEGGGDPRVRGLYFPA}$   
(SEQ ID NO:3)

Please amend heading 6, beginning on page 26, line 18, as follows:

6. Solid-Phase Chemical Synthesis of  
 $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)\text{CH}=\text{CH}(\text{CH}_2)_7\text{COFLPSDFFPSVAAADPRVRGLYFPA}$   
(SEQ ID NO:54)

Please amend heading 7, beginning on page 27, line 10, as follows:

7. Solid-Phase Chemical Synthesis of  
 $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)\text{CH}=\text{CH}(\text{CH}_2)_7\text{COKSSPADREGGGWLSLLVPFVSSSDPR}$   
 $\text{VRGLYFPARGLYFPA}$  (SEQ ID NO:71)

Please amend heading 8, beginning on page 28, line 3, as follows:

8. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANS}$   
 $\text{KFIGITEAAAFPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:1)

Please amend heading 9, beginning on page 28, line 24, as follows:

9. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPADREAAA}$   
 $\text{FLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:56)

Please amend heading 10, beginning on page 29, line 16, as follows:

10. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPADRE}$   
GGGLLVPFVQWFVSSSDPRVRGLYFPA (SEQ ID NO:57)

Please amend heading 11, beginning on page 30, line 7, as follows:

11. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPADREAAA}$   
GLSPTVWLSVGGGDPRVRGLYFPA (SEQ ID NO:58)

Please amend heading 12, beginning on page 30, line 28, as follows:

12. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAA}$   
LLPIFFCLWVGGGDPRVRGLYFPA (SEQ ID NO:59)

Please amend heading 13, beginning on page 31, line 21, as follows:

13. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSQYIKANSKFI}$   
GITEAAAYVNTNMGGGDPRVRGLYFPA (SEQ ID NO:60)

Please amend heading 14, beginning on page 32, line 13, as follows:

14. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSQYIKANSKFI}$   
GITEAAFLPSDFFPSVGGGDPRVRGLYFPA (SEQ ID NO:1)

Please amend heading 15, beginning on page 33, line 5, as follows:

15. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKAN}$   
SKFIGITEGGGFLPSDFFPSVSSSDPRVRGLYFPA (SEQ ID NO:61)

Please amend heading 16, beginning on page 11, line 26, as follows:

16. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKAN}$   
SKFIGITEAAAYVNTNMGLKGGGDPRVRGLYFPA (SEQ ID NO:62)

Please amend heading 17, beginning on page 34, line 18, as follows:

17. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSK}$   
FIGITEAAAPLGFFPDHGGGDPRVRGLYFPA (SEQ ID NO:65)

Please amend heading 18, beginning on page 35, line 10, as follows:

18. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSYIKANSK}$   
FIGITEAAAMQWNSTALHQALQDPGGGDPRVRGLYFPA (SEQ ID NO:72)

Please amend heading 19, beginning on page 36, line 1, as follows:

19. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPDAREAAA}$   
ILSKTGDPVGGGDPRVRGLYFPA (SEQ ID NO:65)

Please amend heading 20, beginning on page 36, line 22, as follows:

20. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAA}$   
VLQAGFFLLGGGDPRVRGLYFPA (SEQ ID NO:66)

Please amend heading 21, beginning on page 37, line 15, as follows:

21. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADRESSS}$   
FLLTRILTIGGGDPRVRGLYFPA (SEQ ID NO:67)

Please amend heading 22, beginning on page 28, line 7, as follows:

22. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAA}$   
 $\text{FLGGTPVCLGGGDPRVRGLYFPA}$  (SEQ ID NO:68)

Please amend heading 23, beginning on page 38, line 28, as follows:

23. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIG}$   
 $\text{ITEAAAGLSPTVWLSVGGGDPRVRGLYFPA}$  (SEQ ID NO:69)

Please amend heading 24, beginning on page 39, line 19, as follows:

24. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSK}$   
 $\text{FIGITEAAASIVSPFIPLLGGGDPRVRGLYFPA}$  (SEQ ID NO:5)

Please amend heading 25, beginning on page 40, line 12, as follows:

25. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAA}$   
 $\text{STLPETTVVRRGGGDPRVRGLYFPA}$  (SEQ ID NO:70)

Please amend heading 26, beginning on page 41, line 4, as follows:

26. Solid-Phase Chemical Synthesis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFI}$   
 $\text{GITEAAAFPSDFPSVGGGCTKPTDGNCT}$  (SEQ ID NO:4)

Please amend heading 27, beginning on page 41, line 24, as follows:

27. Cleavage of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAAFPSDFP}$   
 $\text{SVGGGCTKPTDGNCT}$  (SEQ ID NO:4) Peptide-Resin

Please amend heading 28, beginning on page 43, line 23, as follows:

28. Preliminary Purification of Cleaved Solution of  $\text{CH}_3(\text{CH}_2)_{16}\text{CO}$  KSSPADREA  
AASTLPETTVVRRGGGDPRVRGLYFPA (SEQ ID NO:70) Peptide-Resin

Please amend heading 29, beginning on page 45, line 7, as follows:

29. Method for Purification of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFI}$  (SEQ ID NO:69)

Please amend the paragraph beginning on page 46, line 3, as follows:

[0159]  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAFLGGTPVCLGGGDPRVRGLYFPA}$  (SEQ ID NO:68) was further purified by reversed phase chromatography with different packing materials, and the elution peak fractions were collected and their purities were analyzed by RP-HPLC.

Please amend the paragraph beginning on page 46, line 7, as follows:

Table 8. Comparison of the purification effects of different packing materials used in the reversed phase chromatography

Packing material used in the reversed phase chromatography	Purity (%)
[[Dleta]] <u>Delta</u> Pak C18	97.69
SOURCE 30 RPC	94.26
POROS 50 R2	96.24
POROS 50 R1	98.73

The results were shown in Table 8. The purity of the elution peak fractions was relatively high when the packing material POROS 50 R1 with a relatively weak hydrophobicity was used as the



fixed phase in the reversed phase chromatography, indicating that packing materials with a relatively strong hydrophobicity (~~Delta~~ Delta Pak C18, SOURCE 30 RPC and POROS 50 R2) were not suitable as fixed phase for the purification of the product of the present invention having a relatively strong hydrophobicity in reversed-phase chromatography.

Please amend heading 31, beginning on page 46, line 23, as follows:

31. Effects of Ionizing Reagents on the Reversed Phase Chromatography of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADRESSSFLTRILTIGGGDPRVRGLYFPA}$  (SEQ ID NO:67)

Please amend the paragraph beginning on page 47, line 23, as follows:

Phosphoric acid was used as the ionizing reagent instead of hydrochloric acid (which could avoid the corrosion to stainless steel in the system for large scale production in future), and column SR 10/200 POROS 50 R1 was used to further analysis the effects of column temperature on the purity and yield of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSPADREAAVLQAGFFLLGGGDPRVRGLYFPA}$  (SEQ ID NO:66) in the reversed phase chromatography. The chromatography conditions were that: the chromatography system was AKTA explorer 100; the loading amount of the sample EPA44 (10.34 mg/ml) was 0.5 ml; the column had a diameter of 10 mm, a length of 200 mm, with the packing material being POROS 50 R1; the column temperature was shown in Table 6-08; the mobile phase A was 30% ethanol-10 mmol/L phosphoric acid; the mobile phase B was 90% ethanol-10 mmol/L phosphoric acid; the gradient was 0-50% B (5 CV), 50-100% B (0.5 CV), and 100-100% B (0.5 CV); and the flow rate was 4.0 ml/min. The elution peak fractions were collected, the purity and content ~~[[was]]~~ were analyzed by RP-HPLC, and the yield was calculated.

Please amend heading 33, beginning on page 48, line 25, as follows:

33. Determining the Loading Amount and the Capacity in the Reversed Phase Chromatography of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPDAREAAASILSKTGDPVGGGDPRVRGLYFPA}$  (SEQ ID NO:65)

Please amend heading 34, beginning on page 50, line 1, as follows:

34. Effects of the Purification of the Stock Solution of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSYIKANSKFIGITEAAAMQWNSTALHQALQDPGGGDPRVRGLYFPA}$  (SEQ ID NO:72) in Batches and its Reproducibility.

Please amend heading 35, beginning on page 51, line 6, as follows:

35. Protocol for Preparing Lyophilized Liposome Injection Formulation of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAAPLGFFPDHGGGDPRVRGLYFPA}$  (SEQ ID NO:65)

Please amend heading 38, beginning on page 51, line 16, as follows:

38. Process for Preparing Lyophilized Liposome Injection Formulation of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAAYVNTNMGLKGGGDPRVRGLYFPA}$  (SEQ ID NO:62)

Please amend the paragraph beginning on page 52, line 11, as follows:

common soybean phospholipid and cholesterol were used to form phospholipid bilayer membrane, wherein the former was the main lipid component, and the latter could also function to stabilize phospholipid bilayer membrane. In addition, a small quantity of palmitic acid and

vitamin E were added, wherein the former was capable of increasing the number of negative charges being carried and enhancing the binding of liposome to  $\text{CH}_3(\text{CH}_2)_{14}\text{CO}$  KSSQYIKANSKFIGITEAAAFPSDFFPVGGGDPRVRGLYFPA (SEQ ID NO:1) (pI 8.1), while the latter was used to prevent the oxidization and decomposition of phospholipids. Mannitol and human serum albumin could be used as protection agent and excipients for the lyophilized liposome. Phosphate buffer (pH 6.5) could be used to delay the lysis of soybean phospholipid and to regulate the osmotic pressure to isosmotic state.

Please amend heading 40, beginning on page 52, line 27, as follows:

40. Determining the Lipid Components in the Vaccine Formulation of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEGGGFLPSDFFPVSSSDPRVRGLYFPA}$  (SEQ ID NO:61) for Treatment of Diseases and the Conditions for Forming Liposome

Please amend heading 42, beginning on page 54, line 22, as follows:

42. Determining the Formulation of a Lyophilized .epsilon.PA44 Liposome Injection of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSQYIKANSKFIGITEAAAFPSDFFPVGGGDPRVRGLYFPA}$  (SEQ ID NO:1)

Please amend heading 43, beginning on page 56, line 10, as follows:

43. Results of Batch Production of Lyophilized Injection Formulation of  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSSQYIKANSKFIGITEAAAYVNTNMGGGDPRVRGLYFPA}$  (SEQ ID NO:60) and its Reproducibility

Please amend heading 44, beginning on page 57, line 7, as follows:

44. Transformation Experiment of Lymphocytes with  $\text{CH}_3(\text{CH}_2)_{16}\text{COKSS}$   
 $\text{PADREAAALLPIFFCLWVGGGDPRVRGLYFPA}$  (SEQ ID NO:59)

Please amend heading 45, beginning on page 57, line 18, as follows:

45. Identification of Neutralizing Antibodies of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPADRE}$   
 $\text{AAAGLSPTVWLSVGGGDPRVRGLYFPA}$  (SEQ ID NO:58) and Specificity Determination

Please amend heading 46, beginning on page 58, line 4, as follows:

46. Test of Inducing Th1 Activation with  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSS}$   
 $\text{PADREGGGLLVPFVQWFVSSSDPRVRGLYFPA}$  (SEQ ID NO:57)

Please amend heading 47, beginning on page 58, line 15, as follows:

47. Using the ELISPOT Method to Test the Cytotoxicity Induced by  
 $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSPADREAAAFPSDFVGGGDPRVRGLYFPA}$  (SEQ ID NO:56)

Please amend heading 48, beginning on page 59, line 10, as follows:

48. Test of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAAAFPSDF}$   
 $\text{FPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:1) for Inducing Proliferation of Human Peripheral  
Blood Mononuclear Cells (PBMCs)

Please amend heading 49, beginning on page 59, line 26, as follows:

49. Induction of Th1/Th2 Activation of Peripheral Blood Mononuclear Cells  
(PBMCs) from Healthy Human by

CH<sub>3</sub>CH<sub>2</sub>CH=CHCH<sub>2</sub>CH=CH(CH<sub>2</sub>)CH=CH(CH<sub>2</sub>)<sub>7</sub>COKSSPADREGGGWLSLLVPFVSSSDPR  
VRGLYFPA (SEQ ID NO:55).

Please amend heading 50, beginning on page 60, line 14, as follows:

50. HBV-Specific CTL Induced by  
CH<sub>3</sub>CH<sub>2</sub>CCH=CHCH<sub>2</sub>CH=CH(CH<sub>2</sub>)CH=CH(CH<sub>2</sub>)<sub>7</sub>COFLPSDFFPSVAAADPRVRGLYFPA  
(SEQ ID NO:54) and Cytotoxicity Test

Please amend heading 51, beginning on page 61, line 19, as follows:

51. Using ELISPOT Method to Test the Cytotoxicity of  
CH<sub>3</sub>(CH<sub>2</sub>)<sub>7</sub>CH=CH(CH<sub>2</sub>)CO,  
CH<sub>3</sub>CH<sub>2</sub>CH=CHCH<sub>2</sub>CH=CH(CH<sub>2</sub>)<sub>7</sub>CO<sub>7</sub>KSSQYIK-ANSKFIGITEGGGDPRVRGLY  
(SEQ ID NO:73)

Please amend heading 52, beginning on page 62, line 7, as follows:

52. Test of HBV Antigen Inhibition Induced by CH<sub>3</sub>(CH<sub>2</sub>)<sub>16</sub>CO  
KSSPADREAAALLDYQGMLPVGGGDPRVRGLYFPA (SEQ ID NO:52)

Please amend heading 53, beginning on page 62, line 17, as follows:

53. Test of Inducing Proliferation of Lymphocytes in PBMC of Acute Hepatitis B  
Patient with CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKANSKFIGITEAAALLCLIFLLVGGGDPRVRGLYFPA  
(SEQ ID NO:51)

Please amend heading 54, beginning on page 63, line 6, as follows:

54. Analysis of the Lymphocyte Activation of PBMCs from Hepatitis B Patient Induced by  $\text{CH}_3(\text{CH}_2)_{10}\text{COKSSPADREGGSLNFLGGTTVSSSDPRVRGLYFPA}$  (SEQ ID NO:50).

Please amend heading 55, beginning on page 63, line 19, as follows:

55.  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAA AFLPSDFFPSVGGGPRVRGLYFPA}$  (SEQ ID NO:1) Induced the Generation of HBV-Specific Effective CTL From Hepatitis Patients' PBMC and the Cytotoxicity was Tested.

Please amend heading 56, beginning on page 64, line 4, as follows:

56. Using ELISPOT Method to Test Cytotoxicity of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAA AFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:1) in Hepatitis B Patient

Please amend heading 57, beginning on page 64, line 21, as follows:

57.  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAA AFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:1) Induced Th1 Activation in HBV Transgenic Mice

Please amend heading 58, beginning on page 65, line 10, as follows:

58.  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAA AFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:1) Induced CTL Activity in HBV Transgenic Mice

Please amend heading 59, beginning on page 66, line 1, as follows:

59. CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKANSKFIGITEAAAFPSDFFPSVGGGDPRVRGLYFPA

(SEQ ID NO:1) Inhibits Hepatitis B Surface Antigen (HBsAg) in HBV Transgenic Mice

Please amend heading 60, beginning on page 66, line 17, as follows:

60. CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKANSKFIGITEAAAFPSDFFPSVGGGDPRVRGLYFPA

(SEQ ID NO:1) Inhibits Virus Replication in HBV Transgenic Mice

Please amend heading 61, beginning on page 67, line 3, as follows:

61. Determining the Isoelectric Point of CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQ

YIKANSKFIGITEAAAFPSDFFPSVGGGDPRVRGLYFPA (SEQ ID NO:1)

Please amend heading 62, beginning on page 67, line 11, as follows:

62. UV Spectrum Determination of CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKANSKFI

GITEAAAFPSDFFPSVGGGDPRVRGLYFPA (SEQ ID NO:1)

Please amend heading 63, beginning on page 67, line 21, as follows:

63. Determination the Peptidic Pattern of CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKAN

SKFIGITEAAAFPSDFFPSVGGGDPRVRGLYFPA (SEQ ID NO:1)

Please amend heading 64, beginning on page 68, line 8, as follows:

64. Purity Analysis of CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKANSKFIGITEAAAFPSDF

FPSVGGGDPRVRGLYFPA (I) (SEQ ID NO:1)

Please amend heading 65, beginning on page 68, line 25, as follows:

65. Purity Analysis of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAA AFLPSDF}$   
 $\text{FPSVGGGDPRVRGLYFPA}$  (II) (SEQ ID NO:1)

Please amend heading 66, beginning on page 69, line 13, as follows:

66. Determination of Content of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITE}$   
 $\text{AA AFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:1)

Please amend heading 67, beginning on page 70, line 8, as follows:

67. Determination of the Molecular Weight of  $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFI}$   
 $\text{GITEAA AFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID NO:1)

Please amend heading 68, beginning on page 70, line 21, as follows:

68. Determination of Particle Size Distribution of the Liposome of  
 $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAA AFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID  
NO:1)

Please amend heading 69, beginning on page 71, line 3, as follows:

69. Determination of Potency/Specific Activity of the Semifinished Product of  
 $\text{CH}_3(\text{CH}_2)_{14}\text{COKSSQYIKANSKFIGITEAA AFLPSDFFPSVGGGDPRVRGLYFPA}$  (SEQ ID  
NO:1)



Please amend heading 70, beginning on page 72, line 4, as follows:

70. Determining the Potency/Specific Activity of the Liposome of  
CH<sub>3</sub>(CH<sub>2</sub>)<sub>14</sub>COKSSQYIKANSKFIGITEAAAFPSDFFPSVGGGDPRVRGLYFPA (SEQ ID  
NO:1)